TEXTILE TECHNOLOGY DIGEST

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Abstracts

ORGANIC FIBERS I

Acid effect on fibers. Action of sulfuric acid on textile fibers. R. Haller. *Textil-Rundschau* 2, 39-44 (1947); *in German; Chimia 1,* No. 7, 153 (July, 1947).

The less generally known treatment of cotton fabrics with concentrated acids is just about as old as treatment with caustic alkali, according to Mercer (mercerization). In Switzerland recently, very valuable effects have been obtained by this method (transparency, opacity, etc.). Contrary to expectations, it has been ascertained that vegetable fibers are more resistant to highly concentrated acids than animal fibers. When the acids start disorganization of the fiber, loosening of the fibril structure of the fiber through decomposition of the cementing material occurs long before the fibril and cortical cells are attacked. This can lead to rupture of the fiber without any mechanical strain. TTD: 9-47

Cell walls of fibers. Cell walls and synthetic fibers. Wanda K. Farr. *Econ. Botany 1,* No. 1, 98-113 (1947).

Accumulated information, obtained from the results of chemical, physical and microscopic experiments, has led to the development of 2 different viewpoints of the structure of the native cell wall and the relation of wall materials to synthetic products. One interpretation holds that the cellulose molecule is the functional unit which determines the properties of the native cell walls and their synthetic derivatives. These same properties are explained on the basis of a chemical system, established by the activity of the colloidal protoplasm. The development of these interpretations and current trends as well as the experimental techniques are described in detail. The history of synthetic fiber manufacture is reviewed briefly, and 90 references are given. TTD: 9-47

Enzyme action. Research on action of enzymes on different textiles. E. Jaag. *Chimia 1,* No. 3, 57-63 (Mar. 1947).

Cotton materials were stained with India ink, beef blood and milk and then washed. The materials subjected to preliminary treatment with proteolytic enzymes were more thoroughly cleaned than those washed with soap alone. Raw and bleached cotton, raw and boiled silk, rayon, wool and nylon were treated with 3, 9 and 27 g/l. concentrations of an enzyme preparation 12 times for periods of 2 hrs. at 38°C. The appearance, weight and strength of the cotton and rayon were unaffected. Wool suffered a 29-85% loss in strength and 10.6-35.1% loss of weight. Silk and nylon suffered little loss of weight but losses in strength were 10-27% for raw silk and 8-23% for boiled silk. Illustrations are given of the treated and untreated fibers as they appeared under the microscope. TTD: 9-47

Silk and nylon. Silk *vs.* nylon. Anon. *Rayon Textile Monthly 28,* 381 (July, 1947).

Silk and nylon are very briefly compared. Of the many advantages that nylon enjoys over silk, silk has at least one point of superiority in that it may be dyed in an unlimited number of colors and shades with cheap, easily obtainable dyes. TTD: 9-47

Vegetable fibers I 1

Cotton. Special cottons for specific end-uses through research. T. R. Richmond, USDA Bur. of Plant Industry, Soils and Agr. Eng. & Texas Agr. Expt. Station. *Rayon Textile Monthly 28,* 373-5 (July, 1947).

A system to test cotton for specific end-uses, thus making the best use of each variety of cotton, is discussed and the problems involved stated.
ASJ TTD: 9-47

Cotton fiber reactions. New data concerning changes occurring in physico-chemical condition of cotton plant fibers under reaction of some reagents. P. P. Viktorov. *J. Applied Chemistry 19,* No. 9, 900-13 (1946).

It has been shown that reagents of a mineral nature act in a highly destructive manner on the external fiber envelope and produce chemical changes in the cellulose layer embedded in its thickness. In this case, changes in the physico-chemical condition may be referred to the structure and chemical composition of the fibers. When organic reagents are used, the fibers remain almost unchanged structurally and chemically, although their

reactivity is enhanced. Usual methods of investigation having failed to explain this activity, the question requires additional study. TTD: 9-47

Jute fibers. X-ray diffraction study of dyed mercerized and intensively delignified jute fibers. N. G. Banerjee, B. S. Basak & R. K. Sen. *Ind. J. Physics 19,* No. 6, 217-21 (Dec. 1945).

Raw, delignified and mercerized jute fibers, dyed with organic dyes such as congo red and methylene blue, were examined by means of x-ray. It was found that the dyes neither entered into the fiber crystallites nor affected the nature of the cementing of the cellulose fibrils by lignin. However, a deterioration of the alignment of the crystallites of both native and mercerized cellulose along the fiber axis took place. Complete delignification of jute caused a dishevelling of the fibers, thus producing an extension of the x-ray spots as well as weakening of the fiber strength. TTD: 9-47

Jute fibers. On x-ray diffraction patterns of bleached jute fiber. S. C. Sirkar & S. K. Chowdhary. *Ind. J. Physics 20,* No. 1, 31-4 (Feb. 1946).

The widths of the (020), (002) and (120) reflections have been studied in the case of high quality white and Tossa, white top, low quality white and Chinsure green jute fibers in the bleached condition, and the results have been compared with those observed in the case of these fibers before treatment. From these observations, it is concluded that in the case of high quality white, Tossa and white top jute, some of the linkages between the glucose residues are damaged on bleaching with ClO_2, and therefore the length of the chain is diminished. Side bands, however, even in the absence of the lignin, and the width of the micelles are thereby increased. Absorption of the OH group of water by the bleached jute fiber probably further weakens the oxygen bridges already damaged during removal of the lignin and the chain length is still more diminished, so that in the wet condition bleached jute fiber possesses practically no tensile strength. TTD: 9-47

Jute industry. Jute trade turns to rayon. Anon. *Textile Mercury & Argus,* Supplement, 63 (Mar. 1947).

A brief review of the Scottish jute industry. TTD: 9-47

Minor fibers. Minor fiber industries. Brittain B. Robinson. *Econ Botany 1,* No. 1, 47-56 (1947).

The Spanish moss, palmetto, Spartina grass and teasels industries are described. Teasels used to raise the nap or pile of cloth to produce desired finishes on specific fabrics are superior to steel combs for very fine cloths and for methods in which the nap is raised under damp conditions that may cause steel pins to rust. Steel combs are rigid and do not have the give of teasels. TTD: 9-47

Vegetable fibers. Study of some vegetable fibers by x-ray diffraction method. C. R. Bose & N. Ahmad. *Ind. J. Physics 20,* No. 3, 105-10 (June, 1946).

X-ray photographs of several kinds of clean, delignified and fat-free cellulosic fibers were taken and their tensile strengths measured. It was found that fibers characterized by rings in their x-ray diffraction patterns have smaller tensile strengths and greater mean radii than those of the other fibers. The fibers of *Agava Sisalana,* Perrine (sisal hemp) and *Sanseveria Roxburgiana* gave ring-shaped photographs showing that the distribution of the micelles was elastic and at random. A special x-ray diffraction pattern, taken of these 2 fibers stretched to a great extent, showed that the stretching of the fibers partially orients the micelles towards a position more or less parallel to the length of the fiber. TTD: 9-47

Vegetable fibers. Structure, properties and preparation of certain cortical fibers. Anon. *Iowa State College J. Sci. 20,* No. 3, 365-83 (Apr. 1946); *Chimie et Industrie 58,* No. 1, 66 (July, 1947).

In addition to hemp and flax, there are many plants in the Middle West from which fibers can be obtained. Their properties and preparation are described. The most useful of these plants are: *Apocyanum cannabinum, Cannabis sativa, Aselepia syriaco, A. Sullivantii et Gonolobus.* Fabrics similar to linen can be made from these plants. TTD: 9-47

COIR MAT AND MATTING INDUSTRY IN GERMANY. Anon. Brit. Intelligence Objectives Subcommittee Report No. 1285; price 1s 7d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

LINEN INDUSTRY IN GERMANY. Anon. Brit. Intelligence Objectives Subcommittee Report No. 1218; price 17s 10d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

Animal fibers I 2

Non-felting wool. Methods for preparation of non-felting wool. H. Briggs. *Textil-Rundschau 2,* 75-9 (1947); *Chimia 1,* No. 5, 121 (May, 1947).

All methods diminishing the felting properties of wool depend on decreasing or removing the friction between the fiber surface. The desired change in the fiber surfaces can be attained by the use of known chemicals. The oldest method is wet chlorination, in which Cl reacts vigorously owing to the swelling of the wool; and local over-chlorination is a frequent danger. This disadvantage can be overcome either by decreasing the moisture content of the wool and application of the dry

chlorination process or by using an inert solvent which will not cause swelling and thereby permits only surface chlorination. One modification consists in the use of enzymes such as trypsin and papain. These large molecules are able to infiltrate the wet, swollen wool fibers and work against disintegration of the surfaces. According to the recently patented chlor-enzyme method, the use of dry Cl and papain are combined. The wool thus treated is soft, has a silky gloss and is entirely non-felting. Preshrinking raises the dye absorption capacity of wool, especially for the customary acid dyes. By the use of highly aggregated dyes, different shades are obtained in the untreated and the non-felting woolens; this process is useful in obtaining 2-tone effects in a single dye bath. When materials of varying degrees of preshrinking are used, an equalizing effect is obtained by pretreatment with dichromate. Although the water fastness of the dyes, excepting the chromium dyes, will be unfavorably affected by preshrinking, light-fastness will not be changed. TTD: 9-47

Silk determinations. Determination of constituents of loading material in silk treated with tin salts. P. Cardoni. *Chim. e Ind. (Milan) 27,* No. 1/2, 4-6 (1945). *Chimie et Industrie 57,* No. 2, 161 (Feb. 1947).

A description is given of the method for determining the components of the mineral loading in silk. Preliminary qualitative analyses are run on the ash, obtained by combustion of the weighted silk, to determine the presence of elements which commonly occur in mineral loading: Na, Sn, P, Al, SiO_2. TTD: 9-47

Wool properties. Effect of formaldehyde on acidic and basic properties of wool. Jacinto Steinhardt, Chas. H. Fugitt & Milton Harris. *J. Biol. Chem. 165,* 285-91 (Sept. 1946).

As with other proteins, the tendency of wool to combine with acids and bases is greatly influenced by the presence of formaldehyde. Measurements were made of the amounts of HCl and KOH combined by wool in the presence of 2 concentrations of formaldehyde (0.25 and 1.0 m) over the pH range 3.0-13.3 at 0°. These results were compared with earlier determinations in the absence of formaldehyde. The effect of the presence of formaldehyde was determined both in the absence and presence of salt. TTD: 9-47

Wool structure. Transverse linkages and polymerization reactions in keratin. J. B. Speakman. *Chimia 1,* No. 9, 179-80 (Sept. 1947).

The molecular structure of wool is described, and the effects of dyeing, finishing, preshrinking and de-felting on the disulfide linkages are discussed. TTD: 9-47

Animal fiber carroting. Alfred E. Hodshon & Harold H. Tucker (to John B. Stetson Co.). Can. P. 441 619, May 20, 1947.

See USP 2 411 725, Nov. 26, 1946 (TTD: *4,* 37). TTD: 9-47

BIBLIOGRAPHY OF TECHNICAL LITERATURE ON SILK. F. O. Howitt, Brit. Cotton Industry Research Assn. Hutchinson's Scientific & Technical Publications, 47 Prince's Gate, London, S. W. 7; 248 pp.; price 21s.

Reviewed in *Textile Mercury & Argus 116,* 370 (Mar. 14, 1947). TTD: 9-47

GERMAN WOOL-COMBING INDUSTRY AND WOOL-GREASE EXTRACTION PROCESSES. Anon. Brit. Intelligence Objectives Subcommittee Report No. 474; price 6s 2d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

MANUFACTURE OF NONWOVEN OR COMPRESSED WOOLEN FELT IN GERMANY. Anon. Field Information Agency, Technical, Report No. 472; price 1s 7d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

TOW-TO-TOP (SPINNBAND) PROCESS IN GERMAN WORSTED INDUSTRY. Anon. Brit. Intelligence Objectives Subcommittee Report No. 1211; price 3s 2d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

WOOL—ITS CHEMISTRY AND MODIFICATION BY CHEMICAL TREATMENT IN GERMANY. Anon. Brit. Intelligence Objectives Subcommittee Report No. 1229; price 2s 2d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

Artificial fibers I 3

Crimped acetate staple. Teca crimped acetate staple sets new trends in textures. Anon. *Traveler* No. 121, 8-13 (Oct. 1947).

Teca (Tennessee Eastman Corp.), mechanically crimped acetate staple fiber and available currently in 3, 5, 8, 12, 16, and 20 denier in any desired length (usually 1-7″) and with either bright or dull luster, is briefly described. It lends itself to cross-dyeing because it requires separate dyes that do not affect other fibers (except nylon). Teca may be spun on systems used for cotton, rayon, wool, worsted, or silk. TTD: 9-47

Viscose. Examination of viscose under microscope. F. Castellani. *Chim. e Ind. (Milan) 28,* No. 1/2,

6-9 (1946). *Chimie et Industrie 57,* No. 2, 161 (Feb. 1947).

Examination of viscose under the microscope shows the presence of "amorphous-corpuscles" whose presence is attributed to secondary products formed during the treatment with xanthate. These corpuscles are found in larger numbers in ordinary viscose than in carefully prepared viscose, and they appear in quantities inversely proportional to the degree of sulfuration. A certain proportion exists between the fibers present in viscose and its filterability. TTD: 9-47

Viscose rayon. Continuous production of viscose yarn using unity or plurality of thread moving reels. A. Mothwurf. *Rayon Textile Monthly 28,* 288 (May, 1947).

A brief review of viscose yarn thread reels is intended to "supplement or correct impressions created by recent publications (*i.e., Fortune* and *Wool & Cotton Reptr.*)." TTD: 9-47

Crimped cellulosic filament. Wm. H. Charch & Wm. F. Underwood (to Can. Industries, Ltd.). Can. P. 441 493, May 20, 1947.

See USP 2 414 800, Jan. 28, 1947 (TTD: *4,* 103). TTD: 9-47

Alkali cellulose. Wm. R. Schmitz, Jr. (to Can. Industries, Ltd.). Can. P. 441 540, May 20, 1947.

An alkali cellulose-sodium hydroxide solution slurry containing alkali cellulose is formed from cellulose having differing swelling characteristics and the alkali cellulose separated from the NaOH solution. The temperature of the slurry is varied between the slurry-forming step and the separation of the alkali cellulose in inverse proportion to the different swelling characteristics of the alkali cellulose in the slurry. The viscosity of the cellulose fed to the separating zone is kept constant by regulating the temperature of the slurry through use of an automatic device. TTD: 9-47

Wool-like fiber. Preparation of wool-like fiber from cellulose hydrate. To Spinnstoffwerk Glauchau A. G. und Zellwolle- und Kunstseide-Ring G. m. b. H. French P. 889 117, Dec. 31, 1943. *Chimie et Industrie 56,* No. 1, 50 (July, 1946); *in French.*

Rayon, in the swollen state, is treated with a solution of cellulose, synthetic resins and a compound capable of evolving gas. When the fibers are expelled from solution, evolution of gas prevents the formation of uniform pellicles. A buckling of the rayon fiber takes place, thus giving it thermal insulation properties. TTD: 9-47

CONTINUOUS PROCESSING FOR SPINNING VISCOSE YARN AT ZELLWOLLE LENZING A. G., OBERDONAU, AUSTRIA. Anon. Field Information Agency, Technical, Report No. 10; price 7d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

CONTINUOUS SPINNING OF CUPRAMMONIUM RAYON AT J. P. BEMBERG (WUPPERTAL) AND I. G. FARBENINDUSTRIE (DORMAGEN). Anon. Brit. Intelligence Objectives Subcommittee Report No. 1380; price 8s 3d.

Listed in Classified List No. 10 of Industrialists' Reports on German and Japanese Industry (July, 1947). TTD: 9-47

INDUSTRIAL PROTEINS. KARL FREUDENBERG A. G. PRODUCTION OF ARTIFICIAL HORSE-HAIR FIBERS. Anon. Field Information Agency, Technical, Report No. 365; price 7d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

MANUFACTURE OF CUPRAMMONIUM, RAYON AND STAPLE FIBER, CELLULOSE ACETATE, ETC. (I. G. FARBENINDUSTRIE, DORMAGEN). Anon. Combined Intelligence Objectives Subcommittee Report No. XIX-5; price 1s 7d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

MATERIALS AND MACHINES USED IN MANUFACTURE OF CELLULOSE ACETATE RAYON. Anon. Brit. Intelligence Objectives Subcommittee Report No. 1133; price 6s 8d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

PROCESSING OF RAYON STAPLE FIBER ON COTTON SPINNING MACHINERY IN GERMANY. Anon. Brit. Intelligence Objectives Subcommittee Report No. 634; price 5s 2d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

PROCESSING OF SPUN RAYON YARN IN GERMANY. Anon. Brit. Intelligence Objectives Subcommittee Report No. 177; price 1s 7d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

PROGRESS IN MANUFACTURE OF ARTIFICIAL TEXTILES. NEW APPLICATIONS. E. Tessier (Centre de Perfectionnement technique. Cours-conferences, No. 1619, June 6, 1946). Presses Documentaires, Paris; 11 pp.; 33 f.

Reviewed in *Chimie et Industrie 57,* No. 4, 378 (Apr. 1947). TTD: 9-47

PUNCHING OF SPINNERETS, I. G. FARBEN, AGFA CAMERA WERK MUNICH. Anon. Field Information Agency, Technical, Report No. 153; price 7d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

RAPID PRODUCTION OF VISCOSE SPINNING SOLUTIONS AT ROTTWEIL. Anon. Field Information Agency, Technical, Report No. 1028; price 1s 1d.

Listed in Classified List No. 10 of Industrialists' Reports on German and Japanese Industry (July, 1947). TTD: 9-47

RAYON AND SYNTHETIC FIBER INDUSTRY OF JAPAN. Anon. Brit. Intelligence Objectives Subcommittee /JAP/Preliminary Report No. 1666; price 30s 8d.

Listed in Classified List No. 10 of Industrialists' Reports on German and Japanese Industry (July, 1947). TTD: 9-47

RAYON FIBERS: VEREINIGTE GLANZSTOFF G. M. B. H. (ELBERFELD, WUPPERTAL). Anon. Brit. Intelligence Objectives Subcommittee Report No. 156; price 1s 1d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

RAYON TOW (SPINNBAND) AND STAPLE IN WORSTED SPINNING INDUSTRY, AUGSBURGER KAMMGARM SPINNEREI, AUGSBURG. Anon. Field Information Agency, Technical, Report No. 7; price 7d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

STAPLE FIBER TOW-TO-TOP CONVERSION METHODS IN GERMANY. Anon. Brit. Intelligence Objectives Subcommittee Report No. 1096; price 14s 4d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

VISCOSE CONTINUOUS AND RAYON STAPLE FIBER PLANTS OF BRITISH, AMERICAN & FRENCH OCCUPATION ZONES OF GERMANY. Anon. Brit. Intelligence Objectives Subcommittee Report No. 290; price 30s 7d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

VISIT TO RAYON THROWING AND DOUBLING FACTORY AT KUNSTSEIDEN A. G. Anon. Brit. Intelligence Objectives Subcommittee Report No. 1138; price 1s 1d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

Synthetic fibers I 4

Acrylonitriles. Acrylonitriles, new class of synthetic fibers. Jos. V. Sherman. *Textile World 97,* No. 3, 101-2, 215-16 (Mar. 1947).

Polymerized acrylonitrile is being used as a fiber-forming material. Fiber A and Vinyon N are 2 new fibers that have been produced. Properties and uses of these fibers are discussed and a list of patents, concerning acrylonitrile fibers, given. TTD: 9-47

Nylon. Weaver considers nylon. Robt. E. Ellsworth. *Rayon Textile Monthly 28,* 382-3 (July, 1947).

The use of nylon in sailcloth, particularly with reference to its superiority over cotton in such use, is briefly discussed as being among the more recent examples of the utilization of nylon. TTD: 9-47

Nylon. More facts about nylon textiles. E. Waters. Imperial Chem. Industries, Ltd. *Textile Mercury & Argus 116,* 297-8 (Mar. 7, 1947).

In a lecture, summarized, the properties of nylon and nylon textiles are briefly reviewed. TTD: 9-47

Nylon patents. Review of nylon patents. Paul Wengraf, Arkansas Co. *Rayon Textile Monthly 28.* 34-5, 82, 140-2 213-15, 279, 325-6, 383-5 434-6, 490-1, 554-5 (Jan.-Oct., 1947).

The patent literature on the preparation and processing of nylon is reviewed and classified.
HAM TTD: 9-47

Synthetic fibers. Synthetic fibers. Anon. *Textile Mercury & Argus 116,* 485-6 (Apr. 4, 1947).

The manufacture, properties, and uses are briefly surveyed for cuprammonium rayon and the Saran group of fibers. TTD: 9-47

Synthetic fibers. New synthetic and partially synthetic fibers in England and America. J. Talen. *Chem. Weekblad. 43,* 309-13 (May 17, 1947).

A brief description of the following synthetic textiles is given: nylon, Tenasco, Durafil, Rayolanda X, Fortisan, Ardil, Aralac, Saran, Idaglass and alginate fibers. TTD: 9-47

Polymer. Geo. DeW. Graves (to Can. Industries, Ltd.). Can. P. 441 484, May 20, 1947.

A synthetic linear polyamide is mixed with an aromatic amine containing at least 2 cyclic nuclei, such as phenothiazine. The compound may also contain a dihydroxamic acid, such as beta-phenyladipodehydroxamic acid. TTD: 9-47

Plasticizer for polyamides. Franklin T. Peters (to Can. Industries, Ltd.). Can. P. 441 485, May 20, 1947.

A monocarboxylic acid-polyhydric alcohol ester, in which at least one OH group is not esterified and in which the monocarboxylic acid contains at least 6 C atoms, is used to plasticize a fiber-forming synthetic linear polyamide in which the average number of C atoms separating the amide groups is at least 2. The plasticized polymer is softer and more pliable than the original polymer, but its melting point is not appreciably lower. The plasticizing agent may be an ester of castor oil acid and propylene glycol. TTD: 9-47

Polymeric material. Merlin M. Brubaker, Donald D. Coffman & Frank C. McGrew (to Can. Industries, Ltd.). Can. P. 441 491, May 20, 1947.

A mixture of at least 2 preformed synthetic linear polyamides, at least one of which is water-soluble, and at least one is water-insoluble, is heated at 250-300°C until the molten polyamides form a single phase and a homogeneous product is obtained on solidification. The solid should contain not more than 10% of water-extractable polyamide. It has a high melting point and enhanced affinity for dyes. Swelling agents and dyes may be incorporated in the product. TTD: 9-47

Plasticizing nylon. Merlin M. Brubaker (to Can. Industries, Ltd.). Can. P. 441 492, May 20, 1947.

See USP 2 378 977, June 26, 1945 (TTD: *2*, 280). TTD: 9-47

Polymerization. Wm. E. Hanford & John R. Roland (to Can. Industries, Ltd.). Can. P. 441 498, May 20, 1947.

Polymers of ethylene and an N-vinyl derivative of a secondary amide are produced by heating ethylene and the N-vinyl derivative in the presence of a per-oxy catalyst at 50-250°C at pressures above 5 atmospheres. The N-vinyl derivative is a secondary amide of a saturated aliphatic carboxylic acid or a N-vinyl secondary amide of aromatic dicarboxylic acids in which the amido N is attached to a vinyl group directly. For example, ethylene and an N-vinyl phthalimide are heated in the presence of benzoyl peroxide at 40-350°C at pressures above 5 atmospheres. TTD: 9-47

Nylon. Chas. W. J. Wende (to Can. Industries, Ltd.). Can. P. 441 499, May 20, 1947.

See USP 2 389 655, Nov. 27, 1945 (TTD: *3*, 7). TTD: 9-47

Polymerization. Wm. E. Hanford & John R. Roland (to Can. Industries, Ltd.). Can. P. 441 500, May 20, 1947.

Ethylene and vinylidine chloride are heated in the presence of a per-oxy catalyst at 40-350°C and at pressures of 50 to 1500 atmospheres. They may be heated in an aqueous medium in the presence of benzoyl peroxide. TTD: 9-47

Polyamide. Polycondensation products and process for their preparation. To Deutsche Hydrierwerke A. G. French P. 889 303, Jan. 6, 1944; *Chimie et Industrie 56,* No. 1, 50 (July, 1946); *in French.*

Dicarboxylic acids of the formula HOOC-R-COOH are combined with diamines by heating. R corresponds to a bivalent radical containing at least 4 C atoms which are separated at least once by O, SO or SO_2. For example, equimolecular quantities of ω,ω′-decamethylene diamine and thio-diethoxy-acetic acid are heated together in a solvent such as diethyl ether until the salt is formed. The solvent is distilled off and the mixture is kept at a temperature of 250-270°C in an inert atmosphere for 5 or 6 hrs. or until the polyamide is formed. The polyamide is a colorless elastic compound which can be drawn into fibers. TTD: 9-47

Polyamide. Superpolyamides and process for their preparation. To Deutsche Hydrierwerke A. G. French P. 889 332, Jan. 6, 1944; *Chimie et Industrie 56,* No. 1, 50 (July, 1946); *in French.*

Bifunctional compounds, capable of forming amides, are heated with compounds of the general formula RCH (NH_2) R′ CH (NH_2) R. R represents an aryl radical which can be substituted or hydrogenated, and R′ is a bivalent radical containing at least 2 C atoms. For example, in an atmosphere of CO_2, 1,6-diamino-1, 6-diphenylhexane is fused with equimolecular quantities of adipic acid. This mixture is heated to about 250-270°C in the absence of air, after which condensation takes place. A polyamide is formed from which stable fibers are obtained. TTD: 9-47

Polyamide fibers. Polycondensation products and process for their preparation. To Deutsche Hydrierwerke A. G. French P. 889 344, Jan. 6, 1944; *Chimie et Industrie 56,* No. 1, 50 (July, 1946); *in French.*

These products are formed by condensing, at high temperatures, carboxylic acids of the general formula: HOOC.R. N(R′) X. N-(R″). R.COOH. R′ and R″ represent hydrogen or hydrocarbon radicals, X represents the groups CO, CO.CO, or CO.R.CO, and R represents a bivalent hydrocarbon radical which can be substituted by amines, glycols or their mixtures. For example, ω, ω′-decamethylene diamine is condensed with carbamide-N, N′-diacetic acid to form a polyamide which can be drawn into fibers. TTD: 9-47

NEW FIBERS AND THEIR APPLICATIONS IN GERMANY DURING WAR PERIOD. Anon. Field Information Agency, Technical, Report No. 44; price 1s 1d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

SYNTHETIC MATERIALS. I. G. can der Meulen, editor. Instituut der Vlaamsche Ingenieursvereeniging; Torengebouw VII, Schoenmarkt 31, Antwerp; 1944; 101 pp.; 100 Belgian f.

Reviewed in *Chem. Weekblad. 42,* 49-50 (Feb. 16, 1946). TTD: 9-47

Fiber applications I 5

Electrical insulator. Donald Finlayson, Ernest L. Greenwood & Wm. J. Simpson (to Henry Dreyfus). Can. P. 441 639, May 20, 1947.

Metallic wires are lapped with fine artificial filaments with a denier of 1.5 or less. These filaments are made of a thermoplastic material which coalesces on heating to form a continuous insulating cover for the wire. A liquid softening agent for the filaments may be used. TTD: 9-47

Fiber processing I 6

Wool roping. Cleaner wool roping produced by fiber conditioner. Anon. *Textile World 97,* No. 4, 125-6 (Apr. 1947).

A new machine for cleaning textile fibers, particularly wool, that uses tension instead of a crushing action, is described. TTD: 9-47

INORGANIC FIBERS II

ASBESTOS TEXTILE INDUSTRY IN GERMANY. Anon. Field Information Agency, Technical, Report No. 460; price 2s 8d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

GERMAN ASBESTOS INDUSTRY. Anon. Brit. Intelligence Objectives Subcommittee Report No. 404; price 6s 9d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

GERMAN GLASS INDUSTRY (BRITISH & AMERICAN ZONES). Anon. Brit. Intelligence Objectives Subcommittee Report No. 403; price 15s 10d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

GLASS FIBER INDUSTRY IN GERMANY. Anon. Brit. Intelligence Objectives Subcommittee Report No. 1340; price 10s 3d.

Listed in Classified List No. 9 of Industrialists' Reports on German and Japanese Industry (June, 1947). TTD: 9-47

FIBER TO YARN III

Blended yarns. Knitting yarns require skillful preparation. R. M. McNeal. *Textile World 97,* No. 3, 116-17, 198, 200 (Mar. 1947).

Blend details and methods, carding and drawing processes, spinning, and yarn conditioning are discussed for knitting yarns. TTD: 9-47

Fiber preparation III 1

Card clothing. Installation technique improved for metallic clothing. C. R. Pease, Columbus Mfg. Co. *Textile World 97,* No. 3, 118-20 (Mar. 1947).

Faulty installation of metallic card clothing has led to formation of chokes and a large amount of fiber flying around and under the card. An improved technique for the clothing procedure is given in detail with illustrations. TTD: 9-47

Card stripping. Cotton mills analyze card stripping methods. Anon. *Textile World 97,* No. 3, 141, 216, 220 (Mar. 1947).

Continuous stripper installations and vacuum stripping have been found to reduce labor costs, improve working conditions, and increase the recovery of spinnable fibers. TTD: 9-47

Carding. P. M. H. in woolen yarn manufacture. G. Marshall. *Textile Mercury & Argus 116,* 448-9 (Mar. 28, 1947).

Carding machines in England and on the Continent are compared, and a suitable arrangement for a modern carding machine is given. TTD: 9-47

Carpet yarns. Problems in carpet yarn manufacture. Irvin Marsden, Platt Bros. *Textile Mercury & Argus 116,* 447 (Mar. 28, 1947).

A lecture on processing (blending, carding, etc.) carpet yarns is summarized. TTD: 9-47

Opening. New opener room designed for best cleaning. E. A. Bentley, Swift Mfg. Co. *Textile World 97,* No. 4, 104-5, 184, 186 (Apr. 1947).

Opener-room equipment (at Swift Mfg. Co.) is described with illustrations and diagrams. Each unit in the opening line performs a definite task (blending, extracting dust, opening, cleaning, or removing metal from stock). TTD: 9-47

Rayon staple. Staple fiber on flax machinery. Anon. *Textile Mercury & Argus 116,* 415 (Mar. 21, 1947).

A brief note on processing rayon staple on flax machinery. TTD: 9-47

Time recorder. Time recorder measures woolen card efficiency. Gustav Zellnik, Textile World. *Textile World 97,* No. 4, 276, 278 (Apr. 1947).

A means of judging the efficiency of a machine is by the use of a time recorder that measures the actual running time of the machine. It needs no drive connection since it operates by vibrations when the machine is running. TTD: 9-47

Weighting mechanism. Wm. A. Hunter (1/2 to Howard & Bullough, Ltd.). Can. P. 441 634, May 20, 1947.

The weight-hook supporting attachment and one or more of the roller saddles are splined or otherwise mounted for slidable adjustment on a bracket in 2 or more sections, pivotally connected to each other and adjustable in relation to each other by means of a common slide. TTD: 9-47

GERMAN CARD CLOTHING INDUSTRY AND CERTAIN TEXTILE WIRE PRODUCTS. Anon. Brit. Intelligence Objectives Subcommittee Report No. 1244; price 4s 8d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

Spinning III 3

German spinning. Denkendorf reports disclose advanced German technology. Anon. *Textile World 97,* No. 3, 133, 135, 137 (Mar. 1947).

A summary of the Quartermaster reports through 1944 on German experimental work on processing and spinning fibers. TTD: 9-47

Spinning. Spinner's task can be set quickly. F. H. Gunther & Marcus Gross. *Textile World 97,* No. 4, 108-9 (Apr. 1947).

Adjusting spinner's work loads by means of charts is discussed. TTD: 9-47

Spinning. Suggestions for collaboration between spinners and manufacturers. E. Snowden, Richard Haworth & Co., Ltd. *Textile Mercury & Argus 116,* 301-2, 307 (Mar. 7, 1947).

Standardization of yarn counts, cones for yarn preparation, automatic machinery, etc. are discussed. TTD: 9-47

Spinning machine. Spinning machine drafts without rolls. C. W. Bendigo, Textile World. *Textile World 97,* No. 3, 113, 188 (Mar. 1947).

By the use of dogs and stops drafting and combing may be done during spinning. This machine (designed by B. H. Foster, U. S. Rubber Co.) can be used for extremely short staple as well as rubber thread. TTD: 9-47

Worsted yarn. American system is based on cotton machinery. R. J. McConnell, Whitin Machine Works. *Textile World 97,* No. 3, 110-12 (Mar. 1947).

Processing worsted yarn on the American system consists of 3 drawings, processing on a super-draft roving frame, and spinning on an improved long-draft frame. Lower cost and better fiber control are 2 advantages of this system. TTD: 9-47

INSPECTION OF BARMEG 2-FOR-1 TWISTERS (VEREINIGTE GLANZSTOFF FABRIKEN, OBERNBERG-AM-MAIN). Anon. Field Information Agency, Technical, Report No. 473; price 1s 1d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

Winding III 4

Winding. Packages used in winding. Anon. *Textile Mercury & Argus 116,* 314 (Mar. 7, 1947).

Yarn may be wound on double-flanged bobbins, bottle bobbins, paper tubes, perforated tubes, or cones. The uses and advantages of each type of package are reviewed. TTD: 9-47

Winding. Modern winding practice. H. L. Muschamp, Muschamp Taylor, Ltd. *Textile Mercury & Argus 117,* 356, 359, 361-5 (Mar. 14, 1947).

A lecture on winding includes a discussion of the "Noco" winder and various winders used in cone and pirn winding. TTD: 9-47

Winding tension. Constant tension drive in textile machinery. Anon. *Machine Design 18,* No. 2, 107 (Feb. 1946).

A description, with an accompanying photograph, is given of a constant tension drive developed for winding yarns when tension and package density are important. Constant tension, regardless of the yarn speed, is maintained by a simple leverage arrangement. TTD: 9-47

Cop tube. Harald L. Amrheim & Emil E. Fuller (to Am. Paper Tube Co.). Can. P. 442 017, June 10, 1947.

See USP 2 381 869, Aug. 14, 1945 (TTD: *2,* 436). TTD: 9-47

Yarn processing — III 5

Sizing nylon. Automatic viscosity control for nylon sizing. Victor A. Schiffer, Synthetic Yarns, Inc. *Rayon Textile Monthly 28,* 321-2 (June, 1947).

Uniform size pickup on the yarn is considered important, the importance of constant viscosity depending upon the denier of the yarn being sized and the amount of size desired. Close automatic control of size viscosity (to within a viscosity range of ± 2 seconds Saybolt) by use of the Norcross viscometer is described briefly.
TTD: 9-47

Tire cord treatment. Henry Dreyfus. Can. P. 442 131, June 10, 1947.

Tire cords made of fibers of regenerated cellulose are coated with a rubber solution while they contain 2% of moisture, at most. This improves the adhesiveness of the cord for rubber without cementing the individual filaments together. Xylene or toluene may be used as the solvent for the rubber. The cords are then subjected to vulcanization. TTD: 9-47

MANUFACTURE OF CRIMPED YARN. Anon. Field Information Agency, Technical, Report No. 1029; price 1s 1d.

Listed in Classified List No. 10 of Industrialists' Reports on German and Japanese Industry (July, 1947).
TTD: 9-47

Yarn products — III 6

Nylon sewing thread. Successful sewing with nylon thread. Robt. E. Ellsworth. *Rayon Textile Monthly 28,* 266-8 (May, 1947).

Problems connected with the use of nylon sewing thread, such as shirrs, puckers, and ripping of seams, are considered to have their origin in the tension adjustments. Nylon thread is finding increasing use in sewing heavy materials, such as shoe welts, canvas, and the like. A heavy ball point needle, like the Torrington No. 18, has been recently developed for fagot-stitching of lingerie.
TTD: 9-47

Nylon sewing thread. Great strength of nylon useful in sewing thread. Wm. E. Mahoney, Premier Thread Co. *Rayon Textile Monthly 28,* 277-8 (May, 1947).

Neophil (Premier Thread Co.) is a nylon sewing thread, briefly described, having such well-known desirable characteristics of nylon as tensile and impact strength and resistance to abrasion, mildew, and "wicking."
TTD: 9-47

Vinyon yarn. New vinyon yarn. Anon. *Textile Mercury & Argus 116,* 378 (Mar. 14, 1947).

A brief note on the properties and uses of Vinyon yarn.
TTD: 9-47

Nylon racket string. Albert F. Smith (to Can. Industries, Ltd.). Can. P. 441 536, May 20, 1947.

See USP 2 401 291, May 28, 1946 (TTD: *3,* 324).
TTD: 9-47

GERMAN COTTON SEWING THREAD INDUSTRY. Anon. Brit. Intelligence Objectives Subcommittee Report No. 1171; price 38s 2d.

Listed in Classified List No. 9 of Industrialists' Reports on German and Japanese Industry (June, 1947).
TTD: 9-47

ROPE AND BINDER TWINE MANUFACTURE. Anon. Field Information Agency, Technical, Report No. 283; price 1s 7d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

SILK AND RAMIE YARN PRODUCTION IN GERMANY. Anon. Brit. Intelligence Objectives Subcommittee Report No. 1328; price 3s 8d.

Listed in Classified List No. 10 of Industrialists' Reports on German and Japanese Industry (July, 1947).
TTD: 9-47

TYLOSE CELLULOSE DERIVATIVES (KALLE & Co., A. G., WIESBADEN-BIEBRICH). Anon. Brit. Intelligence Objectives Subcommittee Report No. 547; price 2s 1d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

YARN TO FABRIC — IV

Cloth shrinkage. Problems of cloth shrinkage. Anon. *Textile Mercury & Argus 116,* 369-70 (Mar. 14, 1947).

A brief discussion on the variations in woolen cloth behavior and the problems of cloth shrinkage. TTD: 9-47

PRINCIPLES OF TEXTILE CONVERTING. Irving Teplitz. Textile Book Publishers, Inc.; 1947; 192 pp.; price $4.00.

Reviewed in *Rayon Textile Monthly 28,* 352 (June, 1947). TTD: 9-47

Yarn preparation — IV 1

Warp sizing. Short-cuts in sizing methods. H. E. Wenrich. *Rayon Textile Monthly 28,* 270-2 (May, 1947).

Among practical suggestions given, the need for smooth beams (whether wood or metal) is emphasized. Rack-

ing supply beams, painting split rod ends (to avoid errors during leasing), and size testing are also discussed. TTD: 9-47

Warper drive. Electronic warper drive gives constant yarn speed. R. J. Demartini, Gen. Electric Co. *Textile World 97,* No. 4, 121, 172, 174 (Apr. 1947).

A new electronic drive for warpers gives automatic operation. It is adaptable to all spindle-driven beamers and has a wide range of speeds. A constant yarn speed can be maintained. By means of a tachometer-generator a constant speed signal eliminates compress roll and danger of scuffing. TTD: 9-47

Warping and sizing. Modern methods of warping and sizing. H. L. Muschamp, Muschamp Taylor, Ltd. *Textile Mercury & Argus 116,* 409, 411, 413, 443, 445, 490-1 (Mar. 21, 28; Apr. 4, 1947).

Discussions of various types of creels, their stop motions and ballooning adjustment, and beaming with details on the Reiner high speed beamer are given. The "V3" warping drum, and rayon, nylon, and rayon tire cord sizing machines are described. TTD: 9-47

Weaving IV 2

Automatic looms. Modern fancy loom. L. Armstrong, Tootal Broadhurst Lee & Co., Ltd. *Textile Mercury & Argus 116,* 376 (Mar. 14, 1947).

A lecture on the use of automatic looms in weaving fancy fabrics is summarized. TTD: 9-47

Loom harness. Loom harness equipment for quality weaves. H. E. Wenrich. *Rayon Textile Monthly 28,* 376-8 (July, 1947).

Practical suggestions are given in the handling of heddles; steel heddles are best for assuring quality production. TTD: 9-47

Shedding motion. Some observations on shedding. John H. Strong. *Textile Mercury & Argus 116,* 307, 309 (Mar. 7, 1947).

Shedding, the process of separating the warp threads into a top and bottom line of warp for passage of the shuttle, is briefly discussed particularly with respect to the dwell of the tappets.

Weave designs. Entwining twill weaves. John H. Strong. *Textile Mercury & Argus 116,* 414-15 (Mar. 21, 1947).

Entwining twill weave designs are discussed with illustrative diagrams. TTD: 9-47

Weave designs. Moss crepes. John H. Strong. *Textile Mercury & Argus 116,* 482-4 (Apr. 4, 1947).

Construction of moss crepes with accompanying diagrams are given. TTD: 9-47

ESSENTIAL POINTS IN WEAVING PRACTICE. W. Middlebrook, Emmott & Co., Ltd., London; 1947; 36 pp.; price 2s.

Reviewed in *Rayon Textile Monthly 28,* 403 (July, 1947). TTD: 9-47

RAYON WEAVING AND THROWING IN GERMANY. Anon. Field Information Agency, Technical Report No. 554; price 3s 2d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

Knitting IV 3

Stocking welt knitting. Hans J. Straussberger. Can. P. 441 452, May 20, 1947.

See USP 2 387 780, Oct. 30, 1945 (TTD: *2,* 559). TTD: 9-47

Stop motion. John J. Nesterowicz (to Van Raalte Co., Inc.). Can. P. 442 117, June 10, 1947.

See USP 2 400 837, May 21, 1946 (TTD: *3,* 331). TTD: 9-47

FLAT KNITTED MACHINERY IMPROVEMENTS DEVELOPED BY H. STOLL & CO., REUTLINGEN, WURTTEMBERG SINCE 1935. Anon. Field Information Agency, Technical, Report No. 138; price 7d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

HOSIERY NEEDLE MAKING INDUSTRY. Anon. Brit. Intelligence Objectives Subcommittee Report No. 347; price 1s 1d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

KNITTING MACHINE MANUFACTURE AND DEVELOPMENT. Anon. Brit. Intelligence Objectives Subcommittee Report No. 217; price 2s 8d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

SOME ASPECTS OF FULL FASHIONED AND WARP KNITTING INDUSTRY IN GERMANY. Anon. Field Information Agency, Technical, Report No. 561; price 2s 1d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

Special fabrics IV 4

Pile fabric. Victor A. Victor. Can. P. 442 004, June 10, 1947.

See USP 2 358 368, Sept. 19, 1944 (TTD: *1*, No. 4, 4). TTD: 9-47

GERMAN CIRCULAR LACE BRAIDING MACHINE BUILDING INDUSTRY. Anon. Brit. Intelligence Objectives Subcommittee Report No. 281; price 1s 1d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

MANUFACTURE OF SURGICAL DRESSING AND ALLIED PRODUCTS AT PAUL HARTMANN CO., HEIDENHEIM. Anon. Field Information Agency, Technical, Report No. 169; price 1s 1d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

Fabric processing IV 5

Detwisting machine control. Automatic control for detwisting machine. Anon. *Rayon Textile Monthly 28,* 348 (June, 1947).

A brief note on an electronic control (patented by Percy Cook). TTD: 9-47

Treating textiles. Christian F. Meyer (to Textile Machine Works). Can. P. 441 622, May 20, 1947.

See USP 2 358 344, Sept. 19, 1944 (TTD: *1*, No. 4, 9). TTD: 9-47

TEXTILE MACHINERY: MACHINERY FOR DRYING SILK, RAYON, AND COTTON IN PIECE FORM. Anon. Brit. Intelligence Objectives Subcommittee Report No. 452; price 4s 2d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

Fabric applications IV 6

Bonded fabric. Bernard J. Habgood & David A. Harper (to Can. Industries, Ltd.). Can. P. 441 503, May 20, 1947.

The outer plies of a fabric for balloon casings are bonded with organic diisocyanates modified polyesters and polyester-amides. These may be cured with formaldehyde. An organic dissocyanate modified reaction product of ethylene glycol, adipic acid, and ethanolamine, cured with dimethylol urea dimethyl ether, may be used. TTD: 9-47

Electrically heated fabric. Jas. A. Hendley (to Russell Mfg. Co.). Can. P. 441 613, May 20, 1947.

See USP 2 379 580, July 3, 1945 (TTD: *2*, 296). TTD: 9-47

Laminate. Carleton S. Francis, Jr. (to Sylvania Industrial Corp.). Can. P. 442 108, June 10, 1947.

A waterproof fabric is produced in a continuous process by applying to each side of an open-mesh fabric under heat and pressure a thermosetting resin film. TTD: 9-47

Composite fabric. Augus S. Bell (to Camille Dreyfus). Can. P. 442 129, June 10, 1947.

A textile material of high thermal insulating power is made by assembling light-weight fabrics having a low degree of air permeability on both sides of an air-retaining layer made of an open-work fabric of relatively high air permeability. The fabrics are locally secured to one another so as to enclose areas of 1 to 100 sq. in. TTD: 9-47

GERMAN LEATHERCLOTH AND RELATED COATED FABRICS INDUSTRY. Anon. Brit. Intelligence Objectives Subcommittee Report No. 1186; price 6s 8d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

JAPANESE AIRFORCE TEXTILES. Anon. Brit. Intelligence Objectives Subcommittee/JAP/PR No. 245; price 1s 7d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

PARACHUTES AND PARACHUTE MATERIALS USED IN GERMANY. Anon. Field Information Agency, Technical, Report No. 465; price 1s 7d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

SURVEY OF GERMAN COATED FABRICS INDUSTRY. Anon. Field Information Agency, Technical Report No. 464; price 4s 8d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

CHEMICAL RAW MATERIALS V

Plastics and elastomers V 1

Nitrocellulose plasticizers. Experiments with nitrocellulose plasticizers. P. Schmidt & K. Stoeckhert. *Kunststoffe 36,* No. 59/60 (Sept. 1946). *Chimie et Industrie 58,* No. 1, 64 (July, 1947).

Tests were run on the plasticizing material, as such and in the form of nitrocellulose films, to determine density, index of refraction, viscosity, etc. The plasticizers were then applied to a standard fabric, such as artificial leather, which was tested for touch, superficial hardness, incombustibility, pliability, aging, and behavior to heat, cold and ultra-violet light. TTD: 9-47

Thermoplastic paste. Ernest F. Brookman & Laurence M. Smith (to Can. Industries, Ltd.). Can. P. 441 505, May 20, 1947.

A paste containing polymerized vinyl halide, an aromatic tri-ester of H_3PO_4, a small amount of a glycol ether phthalate, and a small amount of a hard thermoplastic polymer other than a polyvinyl halide which is soluble in the mixture of the aromatic tri-ester and glycol ether phthalate. The polyvinyl halide is not soluble in the mixture at room temperature. Polyvinyl chloride, tricresyl phosphate, and the phthalate of ethylene glycol monomethyl ether may be used. TTD: 9-47

Coated fabric. Norman H. Brown (to Can. Industries, Ltd.). Can. P. 441 542, May 20, 1947.

Composite sheet material is manufactured by applying to a fabric a polyvinyl chloride paste consisting of ungelatinized polyvinyl chloride as the sole film-forming agent, dispersed in a medium containing a plasticizer which gelatinizes the polyvinyl chloride at an elevated temperature, and a volatile partial solvent for the polyvinyl chloride, and subjecting the coated surface to heat treatment sufficient to evaporate the solvent, gelatinize the polyvinyl chloride, and coalesce the particles to form a dense, inpervious film. The solvent may be an acetic acid ester of cyclohexanol, ethylene glycol monomethyl ether, ethylene glycol monoethyl ether, a monohydric aliphatic alcohol with 3-6 C atoms in the molecule, acetone, methyl ethyl ketone, cyclohexanone, CCl_4, trichlorethylene or tetrachloroethylene. TTD: 9-47

Synthetic film. Daniel D. Lanning (to Can. Industries, Ltd.). Can. P. 441 548, May 20, 1947.

A durable, non-fibrous film, such as a regenerated cellulose film, is impregnated with 30-60% of its weight of a softener (*e.g.*, glycerin) and an insoluble synthetic resin capable of being formed *in situ* at temperatures of 60-90°C. TTD: 9-47

Polythene film. Witty L. Alderson, Jr. (to Can. Industries, Ltd.). Can. P. 441 555, May 20, 1947.

A solid polymer of ethylene and a mixture of naturally-occurring fatty acid glyceride (*e.g.*, palm oil and undecyl stearate) and an ester of a carboxylic acid containing at least 14 C atoms with an alcohol containing at least 8 C atoms is used to produce a self-supporting film. TTD: 9-47

Polytetrafluoroethylene tape. Johannes Alfthan (to Can. Industries, Ltd.). Can. P. 441 557, May 20, 1947.

Finely-divided polytetrafluoroethylene powder is pressed into a preform, baked at 327-500°C until sintered, cooled, and shaved into strips. These strips are baked at 327-

500°C and quenched. They may then be rolled to reduce the thickness to 40-80% of the original thickness. TTD: 9-47

CELLULOSE PLASTICS. D. N. Buttrey. Cleaver-Hume Press, Ltd., S. Audley St., London; price 7s 6d.

Reviewed in *Engineering 164,* 317 (Oct. 3, 1947). TTD: 9-47

FABRIC REINFORCED PLASTICS. W. J. Brown. Cleaver-Hume Press, Ltd., S. Audley St., London; price 7s 6d.

Reviewed in *Engineering 164,* 317 (Oct. 3, 1947). TTD: 9-47

1947 MODERN PLASTICS ENCYCLOPEDIA. Plastics Catalogue Corp., New York; 1400 pp.; price $8.50.

Reviewed in *Machine Design 19,* No. 10, 119 (Oct. 1947). TTD: 9-47

PLASTICS, THEORY AND PRACTICE. Chas. C. Winding & R. Leonard Hasche. McGraw-Hill Book Co., New York; 279 pp.; price $3.50.

Reviewed in *Chem. Eng. 54,* No. 8, 276, 278 (Aug. 1947). TTD: 9-47

Surface-active compounds V 2

Detergents. Theory and practice of ionically active and inactive soap-like materials. A. Chwala & A. Martina. *Textil-Rundschau 2,* 147-61 (May, 1947); *in German; Chimia 1,* No. 8, 169 (Aug. 1947).

The ionic behavior and molecular structure of surface-active agents derived from fatty acids are correlated with their colloidal behavior and consequently with their uses in the textile industry. For instance, washing agents have long, straight hydrocarbon chains, while wetting agents have short, branched chains. Alkyl sulfonates are described in detail. TTD: 9-47

Textile auxiliaries. Development of saponaceous textile aids. A. Chwala. *Mitt. Chem. Forsch.-Inst. Ind. Öster 1,* 9-11 (1946); *Chimia 1,* No. 8, 168-9 (Aug. 1947).

A review is given of the preparation and use of fatty acid derivatives as detergents, dispersing agents, etc. Production figures are given from 1943 to 1946. TTD: 9-47

Surface-active substance. Wm. E. Hanford (to Can. Industries, Ltd.). Can. P. 441 507, May 20, 1947.

An olefine containing less than 4 C atoms is made to react with a sulfite in aqueous solution at 90-200°C and at 400 atmospheres or above. Ethylene and $NaHSO_3$ may be used. The water-soluble salt resulting from

their reaction is treated with HCl to produce a sulfonic acid having the formula $H\text{-}(CH_2\text{-}CH_2\text{-})_n\text{-}SO_3H$, in which n is an integer greater than 1. A peroxygen catalyst may be used for the sulfonation reaction.
TTD: 9-47

Sulfonated amine derivatives. New derivatives of sulfonated amines. To Soc. Ind. Chim. Basle. French P. 889 395, Jan. 7, 1944. *Chimie et Industrie 55,* No. 6, 467 (June, 1946).

Sulfonated amides are treated with aralkyl compounds containing at least 8 C atoms; and, if it is desired, alkylating or arylating agents can be reacted with the products thus obtained. The products formed have excellent foaming and detergent properties. An example of one of these compounds is the reaction product of sodium sulfanilate and chloromethyltetrahydronaphthalene. TTD: 9-47

Capillary-active compounds. Process for manufacture of capillary-active compounds. To Henckel und Cie, G. m. b. H. French P. 889 404, Jan. 10, 1944. *Chimie et Industrie 55,* No. 6, 467 (June, 1946).

Naphthalenes substituted by aliphatic radicals containing at least 3 C atoms are hydrogenated to obtain tetrahydronaphthalene, which is then sulfonated with H_2SO_4 monohydrate. TTD: 9-47

German General Rubber Goods Industry. Anon. Brit. Intelligence Objectives Subcommittee Report No. 349; price 22s 11d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

Introduction to Chemistry of Silicones. Eugene G. Rochow. John Wiley & Sons, New York; 137 pp.; price $2.75.

Reviewed in *Chem. Eng. 54,* No. 8, 273-4 (Aug. 1947). TTD: 9-47

List of Articles on Textile Auxiliary Products (*Melliand Textilberichte,* Heidelberg). Anon. Brit. Intelligence Objectives Subcommittee Report No. 546; price 1s 1d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

CHEMICAL PROCESSING VI

Colloids. Protective colloids. F. Enderlin & L. Schibler. *Textil-Rundschau 2,* 3-11 (1947); *Chimia 1,* No. 4, 95 (Apr. 1947).

Protective colloids play an important role in the textile industry and may be used as laundering and dyeing aids.

The protective action of a new series of textile aids was tested by determination of the gold number (according to Ostwald) and the ruby number (according to Zsigmonly). They were found to be as effective colloids as gelatine, casein and sodium oleate. Albatex PO was found to be excellent as a dyeing and levelling aid.
TTD: 9-47

Detergent. Igepon as a detergent. I, II. H. P. den Otler. *Chem. Weekblad. 43,* 314-18, 323-31 (May 17, 24, 1947).

Igepon and its derivatives are described in detail. Methods of preparation, uses and chemical analyses are fully discussed. Good results are obtained when it is used for cleaning cotton and linen, but it is especially recommended for silk and wool. TTD: 9-47

Dyeing and finishing. Digest of post-war developments in textile processing. Technologist. *Textile Mercury & Argus,* supplement, 71, 73-4 (Mar. 1947).

Developments in the preparation of textile materials and the dyeing and finishing processes are discussed.
TTD: 9-47

Finishing agents. Finishing agents in textile industry. J. A. van der Hoeve. *Chem. Weekblad. 43,* 28-9 (Jan. 11, 1947).

Such finishing agents as inorganic salts, starch, amylose, dextrin, albumen, rubber, cellulose esters and ethers, condensation and polymerization products, paraffin, natural resins, certain soaps, fatty acid derivatives, glycerol, and glucose are discussed briefly. TTD: 9-47

Grease removal. Washing process for grease removal. C. J. A. Hanegraaf & P. Eijzings. *Chem. Weekblad. 41,* 15-21 (Aug. 18, 1945).

Linen was subjected to various washing processes, and it was concluded that a bath with a mixture of alkali and soap was superior to a purely alkaline bath. The degreasing effect of the purely alkaline bath was found to be due to the soap formed by the reaction of the "soap carbonates" deposited on the fibers and the alkali in solution. TTD: 9-47

Scouring agent. New dyeing assistant and scouring agent. M. Mytelka, Dexter Chemical Corp. *Rayon Textile Monthly 28,* 293 (May, 1947).

Dexter Chemical's Oridex D (a blend of the potassium salts of sulfated amide condensation products of straight chain acids) is briefly described. TTD: 9-47

Scouring woolen goods. Effect of scouring and carbonizing on woolen piece goods. Anon. *Rayon Textile Monthly 28,* 389 (July, 1947).

In a brief note on fulling, scouring, and carbonizing it is pointed out that a cloudy condition in the dyed material will result if a residue of oil, grease, or soap of over 1½% is left within the material after carbonizing and neutralizing. TTD: 9-47

Scouring woven fabrics. Scouring Scotch tweeds and worsted suitings. Anon. *Textile Mercury & Argus 116,* 317, 319 (Mar. 7, 1947).

The scouring treatment for tweeds and worsted fabrics depends on the composition of the impurities and blending oil in the cloth. Methods for scouring Scotch tweeds and worsted fabrics are described. TTD: 9-47

Soap substitutes. Cellulose derivatives as substitutes for soap. K. J. Nieuwenhuis. *Chem. Weekblad. 43,* 510-17 (Aug. 16, 1947).

Washing tests, on laboratory and commercial scales, were made with suds in which part of the soap had been replaced by the sodium salt of carboxymethylcellulose (cellulose glycollic acid). When used in combination with capillary-active detergents such as ordinary fatty acid soaps or synthetic detergents, carboxymethylcellulose exhibited outstanding detergent properties. These properties were considered to be due to 3 factors: the close relationship between the cellulosic parts of the macromolecules of the compound and the fibers to be washed; the presence of the carboxyl group which gives a negative charge to all particles and fibers which absorb the macromolecules, this group also binding much water of hydration; and the fact that these protective carboxyl groups have fixed positions with respect to each other. The economic aspects are discussed, with emphasis on the world shortage of fats. TTD: 9-47

FATTY ACIDS, THEIR CHEMISTRY AND PHYSICAL PROPERTIES. Klare S. Markley . Interscience Publishers, New York; 668 pp.; price $10.00.

Reviewed in *Chem. Eng. 54,* No. 10, 263-4 (Oct. 1947). TTD: 9-47

COLOR VII

Continuous bleaching and dyeing. Progress in finishing machinery exemplified by continuous bleaching and vat dyeing of equipment. Edw. S. Pierce, H. W. Butterworth & Sons, Co. *Rayon Textile Monthly 28,* 294 (May, 1947).

A paper reviewing continuous bleaching and 2 dyeing methods (one using the Williams Unit and the other the DuPont pad steam process) is briefly summarized. TTD: 9-47

Dyeing and printing. Preparations for dyeing and printing textiles. To Durand et Huguenin S. A.

French P. 889 228, Jan. 4, 1944; *Chimie et Industrie 56,* No. 1, 38 (July, 1946); *in French.*

These preparations contain combinations of enolic acid esters of cyclopolyketones with polybasic acids. They are prepared by dissolving 40 parts of the sodium salt of the 2-leuco-sulfuric acid ester of 1-naphthylthio-indigo, containing 50% of a vat dye, in 280 parts of water and heating. Then 50 parts of the addition product of 1 mol of dimethyl sulfate and 1 mol of the trihydroxy-ethyl ether of triethanolamine, 100 parts of urea and 500 parts of tragacanth are added, after which the mixture is cooled to 40°C. To this mixture, 30 parts of a 30% solution of sodium nitrite are added, with constant stirring, and the solution is allowed to cool. A preparation is obtained which contains a very finely precipitated dye. This preparation is impressed on cotton fabrics and developed for 8 sec. at 70°C in a H_2SO_4 bath containing 20 cc of concentrated H_2SO_4 per liter. After the fabric is washed, a deep, solid brown impression is obtained. Modifications of this process are described. TTD: 9-47

PRINCIPLES OF COLOR AND COLOR MIXING. J. H. Bustanoby. McGraw-Hill Book Co., 330 W. 42nd St., New York 18, N. Y.; 130 pp.; price $4.50.

Reviewed in *Textile World 97,* No. 3, 162 (Mar. 1947). TTD: 9-47

SURVEY OF GERMAN WOOLEN AND WORSTED DYEING AND FINISHING TRADES. Anon. Brit. Intelligence Objectives Subcommittee Report No. 1327; price 5s 2d.

Listed in Classified List No. 10 of Industrialists' Reports on German and Japanese Industry (July, 1947). TTD: 9-47

WOOL-PREPARING, DYEING AND FINISHING. Anon. Brit. Intelligence Objectives Subcommittee Report No. 1239; price 2s 8d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

Bleaching VII 1

Bleaching. Optical bleaching with Tinopal BV. Ernst C. Caspar, J. R. Geigy AG. *Textil-Rundschau 2,* 212-14 (June, 1947); *in German; Chimia 1,* No. 8, 168 (Aug. 1947).

Tinopal BV (J. R. Geigy) has been found to be very useful in the textile industry for removing the yellowish cast still remaining in many bleached fabrics. This compound, colorless itself, fluoresces very strongly on fibers under the influence of ultraviolet light. The invisible rays contained in daylight are absorbed and returned as visible blue rays of long wave length. Thus the fabric is whitened with a slightly bluish cast. This type of bleach-

ing is fast to washing and boiling, so the treatment need not be repeated after washing, as is the case with blueing. Loss of fiber strength is less than in chemical bleaching. Tinopal BV can be used in combination with finishing agents. TTD: 9-47

Bleaching. Bleaching with sodium chlorite. A. Klein. *Teintex 11,* No. 10, 285-93, No. 11, 321-7, No. 12, 349-54 (Oct. 15, Nov. 15, Dec. 15, 1946). *Chimie et Industrie 58,* No. 1, 66 (July, 1947).

Sodium chlorite, a bleaching agent found to be as harmless as possible to the cellulose molecule, has approximately the same effect as H_2O_2. A pH below 4 is necessary for the best bleaching results, especially with cotton. Certain precautions should be taken to prevent corrosion and also spontaneous decomposition of the chlorite which can be caused by the metals and alloys used in construction of the bleaching apparatus. The harmful effects of ClO_2 on plant personnel, if it is generated in sufficient quantities, are discussed. TTD: 9-47

Bleaching control. Bleaching-range efficiency depends on its control methods. E. A. Murphy & R. Pollock, Brown Instrument Co. *Textile World 97,* No. 4, 119, 166, 168, 170, 172 (Apr. 1947).

Instrumentation in control methods in bleaching is of utmost importance for efficient operation. Various temperature, chemical concentration, and the like controls are discussed. TTD: 9-47

Dyeing VII 2

Dyeing. Dyeing as a scientific problem. R. Haller. *Chimia 1,* No. 4, 77-80 (Apr. 1947).

A review is given of the theories of dyeing from the time of Pliny up to the present. The author concludes that dyeing cotton with all types of dyes is purely a physical process and not a chemical reaction. This is generally true for all vegetable fibers. Neither is copper dyeing of wool the result of a chemical reaction. From the results of research on the condensation of acid wool dyes, however, it may be assumed that chemical processes are the basis for the dyeing. TTD: 9-47

Dyeing nylon. Review of dyeing of nylon. Paul L. Meunier & Arthur K. Saville, E. I. du Pont de-Nemours & Co. *Rayon Textile Monthly 28,* 273-6, 323-4, 379-81 (May-July, 1947).

The dyeing of nylon with acetate, acid, and direct colors is reviewed generally.
HAM TTD: 9-47

Dyeing polyvinyl chloride. Process for dyeing products made from polyvinyl chloride or its mixed polymerizates. To I. G. Farbenindustrie A. G.

French P. 899 189, May 23, 1945. *Chimie et Industrie 55,* No. 6, 467 (June, 1946); *in French.*

By this process polyvinyl chloride derivatives are treated with metallic complexes of azo or azomethene dyes in an aqueous bath at high temperatures. These metallic complexes do not contain groups which make them water-soluble or suitable for dyeing cellulose ethers or esters. This process is carried out in the presence of aqueous dispersions of organic compounds insoluble or immiscible in water, which contain at least one aromatic or hydroaromatic radical which is liquid at the dyeing temperature and in which the dyes are soluble at this temperature. TTD: 9-47

Sulfur dyes. Sulfur dyes and process for their production. To I. G. Farbenindustrie A. G. French P. 889 238, Jan. 4, 1944; *Chimie et Industrie 56,* No. 1, 39 (July, 1946); *in French.*

These products are prepared by sulfating mono- or diamino-anthracenes and their nitrogen-substituted derivatives, especially mono- or diarylamino-anthracenes or the diarylamino-anthraquinones. To a molten mass containing 12 parts of S and 150 parts of sulfur chloride, there is added, a little at a time, at a temperature of 70-80°C, 40 parts of 1-anilido-anthracene, which was prepared by reducing 1-anilido-anthraquinone with powdered Zn. This mixture is slowly heated to 150°C, allowed to boil for about an hour and is distilled to dryness. The temperature is then raised to 270°C and maintained at that point for about six hrs. Consecutive treatment with Na_2SO_4 and a NaOH bath brings the dye into solution and it is treated in the usual manner. It dyes vegetable fibers, in a Na_2SO_4 bath, shades of olive green which are very fast to light. TTD: 9-47

Cotton dye. Process for preparation of tri- and polyazo dyes. To Soc. Ind. Chim. Basle. German P. 742 765, Oct. 21, 1943; *Chimie et Industrie 56,* No. 1, 29 (July, 1946); *in French.*

1-Amino-4-hydroxybenzene-3-carboxylic acid is diazotized by $NaNO_2$ in the presence of HCl. The ammonium salt of 1-amino-naphthalene-7-sulfonic acid is added. The resulting amino azo compound is diazotized in the same manner and then coupled with an alkaline salt of 1-amino-naphthalene-7-sulfonic acid. The resulting dye is similarly diazotized. The diazotized compound is treated with 8-hydroxyquinoline in an alkaline solution at 40°B and then with anhydrous Na_2CO_3. A dark colored triazo dye is precipitated. It is blue in water and dilute alkaline solution and has a strong affinity for cotton. TTD: 9-47

Molecular structure of dyes. New conceptions of molecular structure of dyestuffs. J. S. P. Blumberger. *Chem. Weekblad. 43,* 292-7 (May 10, 1947).

A review with 18 references. TTD: 9-47

DARK SULFUR DYESTUFFS. R. Allemann. Ernst Lang, Zurich; 1943; 51 pp.

Reviewed in *Chimie et Industrie 57,* No. 1, 59 (Jan. 1947). TTD: 9-47

DARK SULFUR DYESTUFFS. R. Dürig. Ernst Lang, Zurich; 1944; 55 pp.

Reviewed in *Chimie et Industrie 57,* No. 1, 60 (Jan. 1947). TTD: 9-47

DYEING OF GLASS FIBER TEXTILES. Anon. Field Information Agency, Technical, Report No. 981; price 7d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

DYEING OF SPUN RAYON AND RAYON FILAMENT YARN IN MECHANICAL APPARATUS IN GERMANY. Anon. Field Information Agency, Technical, Report No. 645; price 2s 2d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

SOME ASPECTS OF RAYON AND SYNTHETIC FABRIC DYEING AND PROCESSING IN GERMANY AND AUSTRIA. Anon. Field Information Agency, Technical, Report No. 556; price 5s 2d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

SOME NEW THIAZOLE DYES. H. Ten Cate. A. Schmidt und Cie, Berne; 1945; 50 pp.

Reviewed in *Chimie et Industrie 57,* No. 1, 60 (Jan. 1947). TTD: 9-47

Printing VII 3

Hand printing. Hand printing of textiles. E. S. Beton. Brocklehurst-Whiston Amalgamated, Ltd. *Textile Mercury & Argus 116,* 378 (Mar. 14, 1947).

Hand-block and screen printing are briefly reviewed in a lecture (summarized). TTD: 9-47

Pigment printing. Review of pigment printing during war years. P. Wengraf. *Textil-Rundschau 2,* 125-31 (1947); *Chimia 1,* No. 7, 153 (July, 1947).

New interest has been aroused in pigment printing through the use of hardenable resin condensates and cellulose derivatives as fixing agents. TTD: 9-47

Printing. Resist printing demands close attention to details. T. N. Patrick. *Textile World 97,* No. 3, 139, 188, 190, 192, 194, 197 (Mar. 1947).

By resist printing white or colored effects may be produced on a colored ground, the ground being dyed or cover printed. Preparation of the cloth and pastes, actual printing, and washing off are discussed for this method. TTD: 9-47

Screen printing. Screen printing of rayon and silk with acid and direct dyes. Technicus. *Rayon Textile Monthly 28,* 341-3, 392-4 (June, July, 1947).

The application of acid and direct dyes to silk and rayon fabrics by screen printing is generally discussed, cellulose acetate fabrics not being included in the term *rayon* for this discussion. Good printing requires a carefully balanced print paste with a soluble thickener and good steaming, washing off and speedy drying.
HAM TTD: 9-47

Pigment fixation. Henry C. Olpin, Sydney A. Gibson & Wm. C. McKnight (to Henry Dreyfus). Can. P. 441 640, May 20, 1947.

After application to the material of an acid, such as tartaric acid, the pigment is applied in the form of a paste containing a water-soluble condensation product of formaldehyde with an amino triazine. On heating, the acid catalyzes the conversion of the condensation product into a water-insoluble product. Pattern effects may be obtained by applying a solid acid, drying the material, and then applying an alkaline paste locally, followed by application of the pigment paste and the water-soluble condensation products, finally heating and drying. TTD: 9-47

Measurement and defects VII 4

Azo dye sensitivity. Sensitivity of certain azo dyes to traces of copper. M. David. *Teintex 11,* No. 4, 91-2 (Apr. 15, 1946). *Chimie et Industrie 57,* No. 3, 273 (Mar. 1947).

The reactions between copper and certain azo dyes are summarized in a table which shows decoloration of the monoazo dyes and turning of color of the polyazo dyes. Copper seems to cause a limited and selective oxidation which causes a break in the molecule. Sulfocyanides or thioureas are used to protect these dyes against cupric oxidation. TTD: 9-47

Color limitation. Limitation of color. III. W. D. Wright, Imperial College of Science and Technology (London). *Rayon Textile Monthly 28,* 337-8, 387-8 (June, July, 1947).

The evaluation of efficiency of dyes is further studied (see TTD: *3,* 387, 562), yellow and blue-green dyes being considered. TTD: 9-47

Dye-fastness. New method for increasing chlorine-fastness of dyes. A. Landolt, Ciba AG. *Textil-*

Rundschau 2, 201-4 (June, 1947); *in German; Chimia 1,* No. 8, 168 (Aug. 1947).

In contrast to that of wool dyes, the chlorine-fastness of diazotizable and sulfur dyes, applied directly to cellulose-containing textiles, is generally unsatisfactory, but the majority of indigo and anthraquinoidine copper dyes are very fast to Cl. It has been found that the chlorine-fastness of dyes for cellulosic textiles can be increased by treatment with synthetic resins, for example, a hydrophobic melamineformaldehyde compound, such as Ciba's "Lyofix A". When finished cotton fabrics are fixed with melamine resins, the Cl is taken up by the resins and a chloramine resin derivative is formed. TTD: 9-47

Dyeing defects. Air bells can be eliminated in wool raw-stock dyeing. Holger Thuemmel. *Textile World 97,* No. 3, 125, 197-8 (Mar. 1947).

Air bells frequently occur in dyeing wool raw stock, especially lofty, springy wools. These bells may be partially eliminated by proper wetting out and higher starting temperature of dye baths. A sure method of eliminating air bells is the use of the chrome-bottom method in chrome dyeing. TTD: 9-47

Hypericine dye. Dyeing action of hypericine. R. Haller. *Textil-Rundschau 1,* 112-13 (1946). *Chimia 1,* No. 2, 49 (Feb. 1947).

The dye hypericine can be obtained by alcoholic extraction of various domestic Hypericums. This dye exhibits substantive characteristics on animal fibers only. Otherwise, it is a mordant dye which is only slightly satisfactory. TTD: 9-47

Indigoid dyes. Studies in indigoid dyes. V. Sisir K. Guha. *J. Ind. Chem. Soc. 23,* 103-6 (Mar. 1946).

Phenanthraquinone and its 2-nitro derivative have been condensed with 4-, 5-, 6-, and 7-methylthionaphthene to form the corresponding isomeric methylthionaphthene phenanthrene indigos. These compounds dye wool and cotton shades of brown and violet. TTD: 9-47

Indigoid vat dyes. Indigoid vat dyes of isatin series. V. Sisir K. Guha & Basu-Mallick. *J. Ind. Chem. Soc. 23,* 214-16 (May, 1946).

Isatin and its 5-bromo; 5-, 7-dibromo; and 5-, 7-dichloro derivatives were condensed with 5-chloro-3-hydroxythionaphthene to form the corresponding 3-indole-2'-(5'-chloro) thionaphthene indigos. These compounds dye wool and cotton shades from red to violet red. 5-, 5'-Dichlorothioindigo was prepared by treating 5-chloro-3-hydroxythionaphthene with potassium ferrocyanide. TTD: 9-47

Pigment properties. Photosensitive properties of

pigments of thio-carbocyanine series. A. V. Borin. *J. Applied Chemistry 19,* No. 12, 1325-34 (1946).

In this work the photosensitive properties of 2 thiocarbocyanine optical sensibilizers have been investigated. Optimal concentrations of pigments are found by means of determining the differences in the actinic currents for an emulsion sensibilized with various quantities of investigated pigments. A comparative testing of the emulsion layers sensibilized with the optimum pigment concentrations has been carried out, showing photographical advantages of one of them. TTD: 9-47

Substantive dyes. Dyeing fibers with substantive dyes. J. Lehembre. *Teintex 11,* No. 5, 128-31 (May 15, 1946); *Chimie et Industrie 57,* No. 5, 484 (May, 1947).

The disadvantages of the usual method and the advantages of a new one are discussed. In the preferred method, the dye bath is heated to the boiling point before the addition of electrolytes. At this point the dye is in an almost molecular state of solution and has little affinity for the fiber. Progressive addition of Na_2SO_4 and NaCl causes the solution to pass into the colloidal state, in which the dye has more affinity for the fiber. A wetting agent is added to the dye bath and the temperature is allowed to fall to about 10-20°C. TTD: 9-47

RESEARCHES ON NORMAL AND DEFECTIVE COLOR VISION. W. D. Wright (Foreword by L. C. Martin). C. V. Mosby Co., St. Louis, Mo.; 1947; 385 pp.; price $10.00.

Reviewed in *Rayon Textile Monthly 28,* 302 (May, 1947). TTD: 9-47

PROOFING VIII

Creaseproofing. Developments in cellulose and wool science. F. C. Wood, Tootal Broadhurst Lee Co., Ltd. *Textile Mercury & Argus 116,* 403, 405 (Mar. 21, 1947).

The use of catalyzed methanol urea for creaseproofing cellulose and wool is discussed. For cellulose the reaction must take place inside the fiber, while for wool it must be outside only. Methods for shrinkproofing wool are briefly reviewed. TTD: 9-47

Fireproofing. Fireproofing of textile fabrics. Anon. *Textile Mercury & Argus 116,* 440, 446 (Mar. 28, 1947).

Fireproofing prevents the fabric from spreading flames and from smouldering or glowing. The process using soluble and insoluble deposits, particularly in fireproofing kapok, are discussed. TTD: 9-47

Fireproofing. Fire-resistant agents reduce flame dangers in cottons. Robt. J. Taylor & Margaret

Dishman, Southern Research Inst. *Textile World 97,* No. 4, 113, 268, 270, 272 (Apr. 1947).

Fire-retardant methods and agents are reviewed, and the Ban-Flame process discussed. Tests on treated and untreated pillows are also discussed. TTD: 9-47

Rayon stabilization. New standard of permanent rayon stability. Anon. *Rayon Textile Monthly 28,* 268-9 (May, 1947).

The Sanforset (Cluett, Peabody's BR-I rayon stabilization) process for permanently stabilizing rayon goods through treatment with glyoxal is briefly described. Shrinkages upon laundering as low as 1-2% are mentioned.
HAM TTD: 9-47

Shrinkproofing wool. Drying is important in shrinkproofing wool. Kenneth H. Barnard, Am. Cyanimid Co. *Textile World 97,* No. 4, 102-3, 246, 248 (Apr. 1947).

The Lanaset process of shrinkproofing wool is composed of 4 main steps: impregnation, drying, curing, and washing. Of these drying is a most important one. Discussion of these 4 steps is given with the aid of a diagrammatic sketch. TTD: 9-47

Water repellency. Evaluation of various water-repellent treatments on 23 cotton fabrics. Genevieve Smith & Helen A. Wellington with Pauline E. Keeney. *Rayon Textile Monthly 28,* 332-4, 371-3, 423-6 (June-Aug. 1947).

The effect of laundering on cotton fabrics which had been treated with a water emulsion of a nondurable, water-repellent finish is presented with accompanying data.
HAM TTD: 9-47

ANIMALIZATION AND WATERPROOFING OF CELLULOSE FIBERS AT DORMAGEN. Anon. Field Information Agency, Technical, Report No. 170; price 7d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

DEVELOPMENTS IN PROTECTIVE CLOTHING IN GERMANY. Anon. Brit. Intelligence Objectives Subcommittee Report No. 152; price 2s 8d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

SPECIAL PROTECTIVE GARMENT FOR AVIATORS (SEENOT-SCHUTZGERÄT). Anon. Combined Intelligence Objectives Subcommittee Report No. XXIII-9; price 1s 1d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

TESTING AND ANALYSIS IX

RESEARCH AND TESTING OF RAYON FIBERS; TEXTILFORSCHUNGS-ANSTALT, KREFELD. Anon. Brit. Intelligence Objectives Subcommittee Report No. 155; price 1s 1d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

TEXTILE TESTING IN GERMANY. Anon. Brit. Intelligence Objectives Subcommittee Report No. 178; price 4s 2d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

TEXTILE TESTING IN GERMANY. H. F. Schiefer, Lyman Fourt, & R. T. Kropf. Am. Soc. for Testing Materials, 1916 Race St., Phila.; 12 pp.; price 50¢.

Reviewed in *Textile World 97,* No. 4, 142 (Apr. 1947). TTD: 9-47

TEXTILE TESTING METHODS AND EQUIPMENT AT I. G. FARBEN, HÖCHST, FRANKFURT-AM-MAIN. Anon. Brit. Intelligence Objectives Subcommittee Misc. Report No. 7; price 18s 4d.

Listed in Classified List No. 10 of Industrialists' Reports on German and Japanese Industry (July, 1947). TTD: 9-47

Physical properties IX 1

Handle of woolen fabrics. Causes of change of handle of woolen fabrics. Arthur N. Patterson, S. Stroock & Co., Inc. *Rayon Textile Monthly 28,* 292 (May, 1947).

The importance of handle to the purchaser of woolen fabrics is emphasized. A number of factors affect handle, causing harshness, boardiness, or dryness; and difficulty is experienced in evaluating handle and the factors controlling it. TTD: 9-47

Single fiber friction. Measurement of friction between single fibers. Nils Gralén & Bertil Olofsson. *Proc. Swed. Inst. Textile Research* No. 3, 3-21 (1947); *in English.*

An apparatus designed to measure both static and dynamic friction between 2 single fibers may be used for studies of the influence of wool scaliness on milling properties and for studying importance of frictional forces between fibers in drawing. TTD: 9-47

Testing water repellency. Marianne Kärrholm, Sigurd Köhler & Nils Gralén. *Proc. Swed. Inst. Textile Research* No. 5, 3-29 (1947); *in Swedish.*

Various methods of testing water repellency are reviewed. A new apparatus, built on the principle of artificial rainfall, is described. Temperature of the water should be kept within 2°C. Height of the fall of drops should be at least 1.5 meters. Hardness of water is unimportant, but pH is essential, especially with wool, varying between 6 and 8. TTD: 9-47

Testing thread pitch. Willis F. Aller (to Sheffield Corp.). Can. P. 441 614-15, May 20, 1947.

A gaging instrument is claimed which has a base with a work-receiving surface, a stationary and a movable thread-engaging block, each with a V-shaped portion to engage threads of different diameter. The V section is truncated to a degree increasing with the distance from the work-receiving surface. TTD: 9-47

Chemical analysis IX 2

Wool mixtures. Semi-microchemical determination of cellulosic fibers in mixture with wool. Maurice Robinet. *Bull. soc. chim. (Belges) 56,* 48-50 (1947).

This process is based on the principle of dissolving the wool in NaOH and is especially applicable to wool and viscose mixtures. It can be applied, however, to any mixture of wool with materials insoluble in NaOH such as rayon, cotton, and linen. Rapid determination, precision, and use of very simple apparatus and small quantities of material are among the advantages of this method. The apparatus and method are described fully. TTD: 9-47

Yarn resistance to microorganisms. Resistance of flax and hemp yarns to microorganisms. Nils Gralén. *Proc. Swed. Inst. Textile Research* No. 4, 3-12 (1947); *in Swedish.*

A soil burial method was used to test the resistance of flax and hemp yarns to microorganisms. Kier boiling of the yarn was found to increase resistance to attack. A theory for the kinetics of the attack of microorganisms is presented. From analysis it is shown that kier boiling diminishes the amount of water-extractable substance in the yarn. TTD: 9-47

TEXTILE MILLS X

Mill expansion. Southern textiles come of age. J. A. Daly. *Mfrs'. Record 116,* No. 10, 44-5, 70, (Oct. 1947).

Expansion of the Southern textile industry continues. Shortages are chiefly in machinery and trained personnel. Details of expanding companies are given.
LCL TTD: 9-47

Buildings, machinery, power X 1

Aluminum in textile machinery. Aluminum has many uses in textile equipment. Chas. Braglio, Aluminum Co. of Am. *Textile World 97,* No. 4, 123, 160, 162, 164, 166 (Apr. 1947).

Aluminum is finding an increased use in textile equipment, machinery, and mill structures. Due to its light weight, workability, resistance to corrosion, and strength, aluminum is replacing the heavier metals. TTD: 9-47

Dyehouses. Knit-cloth dyehouse thrives on diversity. Irving Teplitz, Richard Finishing Co. *Textile World 97,* No. 3, 121, 202, 206, 210, 212, 215 (Mar. 1947).

Equipment, costs, steam and water supply, and waste disposal systems for knit-cloth dyehouses are described. TTD: 9-47

Electrification. Electricity supply and cotton industry. J. B. Ashworth. *Textile Mercury & Argus 116,* 487-9 (Apr. 4, 1947).

A lecture (summarized) reviews the use of electricity in the cotton industry. TTD: 9-47

European textile machinery. Textile machinery and fabric trends in Europe. René Bouvet, Am. Viscose Corp. *Rayon Textile Monthly 28,* 367-8, 417-18 (July, Aug., 1947).

Wartime technical developments in textile machinery, rayon application, etc. are briefly surveyed.
ASJ TTD: 9-47

Heating. Advancement in heating textile factories. A. G. Arend. *Textile Mercury & Argus 116,* 311, 313, 315 (Mar. 7, 1947).

Heating by superheated water will reduce heat losses, economize in fuel and labor, and lessen maintenance needs. A discussion of heating by this method is given. TTD: 9-47

Machinery. Textile machinery in 1946. Anon. *Textile Mercury & Argus,* supplement, 85, 87-90 (Mar. 1947).

A survey of new machinery and processes of the past year. TTD: 9-47

Mill construction. Functionalism is rule for modern mill building. L. Verne Lacey, Lacey, Atherton, Wilson & Davis. *Textile World 97,* No. 4, 117, 186, 188, 190, 246 (Apr. 1947).

Modern construction in mill buildings is reviewed. Goods may be produced more economically when the construction provides ample space, light, heat, etc., all of which is supplied in modern buildings. TTD: 9-47

Mill improvements. Improvements and new buildings highlight textile projects. Anon. *Textile World 97,* No. 3, 123, 220 (Mar. 1947).

A review of some improvements in textile mills resulting from the 1946 program of expansion. TTD: 9-47

Motor drives. Post-war electric motor drive. Anon. *Textile Mercury & Argus 116,* 417-18 (Mar. 21, 1947).

Individual and group driving improvements are reviewed. TTD: 9-47

Nylon mill. Extensive improvements aim at better nylon throwing. Gordon B. M. Walker, Textile World. *Textile World 97,* No. 4, 97-9 (Apr. 1947).

A review of improvements in a nylon hosiery plant (Hess, Goldsmith & Co.). TTD: 9-47

Power transmission. Modern power transmission results in lower power costs. Henry Miedendorp. *Rayon Textile Monthly 28,* 345-8 (June, 1947).

In a brief, general consideration of power transmission in textile mills it is emphasized that friction plays a most important rôle. Various types of drives (such as V-belt with vari-pitch sheaves, group, and individual) babbitt, roller and ball bearings are briefly discussed. TTD: 9-47

Power transmission. Some points on power transmission. P. W. Peel. *Textile Mercury & Argus 116,* 318-19, 321 (Mar. 7, 1947).

Types of belting and speed reducers are discussed. Without proper application of power there is an unnecessary loss in production costs. TTD: 9-47

Rewinder drive. Electric equipment. Anon. *Gen. Elec. Rev. 48,* 39 (Jan. 1945).

An electronic rewinder drive has been developed which includes, besides the usual features, electronic control of both armatures and shunt fields of the d. c. shunt-wound motors on each reel. A new type of cutoff register control, recently developed, employs long-life high-vacuum tubes throughout, eliminating the slower magnetic contactors used in some previous types. This equipment is described briefly. TTD: 9-47

Sewing-machine maintenance. Frequent inspection aids sewing-machine upkeep. E. Dalton White. *Textile World 97,* No. 3, 131, 200, 202 (Mar. 1947).

Sewing-machine maintenance (at Spalding Knitting Mills) has been improved by daily oiling and cleaning of machines and inspection of goods, thorough checking and

adjusting every four weeks, and major overhauling every 2 years. The sewing room is briefly described. TTD: 9-47

Underground mills. Underground plants are feasible for textiles. John A. McPherson, Jr., McPherson Co. *Textile World 97,* No. 3, 114-15, 220, 224, 228 (Mar. 1947).

Underground locations for textile mills are discussed in regard to their construction, cost, heating, etc. Underground mills would be proof against all natural hazards and vulnerable only to an atomic bomb. TTD: 9-47

GERMAN RAG AND SHODDY MACHINERY. Anon. Brit. Intelligence Objectives Subcommittee Report No. 453; price 1s 1d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

TEXTILE MACHINERY AND CHUCKING MACHINES MANUFACTURED BY A. MONFORTS MASCHINEN-FABRIK (MÜNCHEN). Anon. Field Information Agency, Technical, Report No. 392; price 2s 2d.

Listed in Classifiied List No. 9 of Industrialists' Reports on German and Japanese Industry (June, 1947). TTD: 9-47

TEXTILE MACHINERY: ZELLWOLLE LEHRSPINNEREI DENKENDORF. Anon. Field Information Agency, Technical, Report No. 468; price 1s 7d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47

Lighting and air X 2

Air conditioning. Effective temperature influences air conditioning. P. L. Davidson. *Textile World 97,* No. 4, 111, 248, 250, 252, 254, 256, 258, 264 (Apr. 1947).

Effective temperature is the combined effect of humidity, dry bulb, and air velocity on the individual. This temperature is being used as a guide for selecting inside conditions. The application of refrigeration to air conditioning is discussed. TTD: 9-47

Air conditioning. Greater profits through air conditioning. Henry Miedendorp. *Rayon Textile Monthly 28,* 395-7 (July, 1947).

The benefits to be derived from air conditioning in textile mills are discussed in general, evaporative cooling with humidification being compared with mechanical refrigeration. TTD: 9-47

Lighting and color. Factory lighting and color. Anon. *Textile Mercury & Argus,* Supplement, 75, 93 (Mar. 1947).

The work of the Lighting Service Bureau in developing modern methods of lighting and color in textile mills is described. TTD: 9-47

Ventilation in mills. Progress report on ventilation for cotton textile processes. Leslie Silverman & Frederick J. Viles, Jr. *Heating & Ventilating 44,* No. 10, 83-90 (Oct. 1947).

A progress report is presented on the investigation now being carried on at the Harvard School of Public Health to determine atmospheric concentration of air contaminants in cotton textile mills; ventilation requirements for cotton textile processes; and improved methods of controlling dust and air-borne lint. This study in also concerned with improving methods of cleaning cotton since such improvements will decrease air contamination and increase processed cotton production. The data in this paper give a comparison among cotton mills handling different grades of raw cotton with various types of cleaning equipment. These data were obtained with new types of sampling equipment which are briefly described. TTD: 9-47

Wastes X 3

Water conditioning. Soft water for silk hosiery mill with Zeolite water conditioning. R. L. Nessler, DeHaven Eng. Co. *Rayon Textile Monthly 28,* 284-6 (May, 1947).

The Zeolite process for water softening is briefly described and illustrated with particular reference to one mill (Natl. Silk Hosiery Mills, Inc.). TTD: 9-47

Water supply. Quality textile products demand pure, clean and soft water. Henry Miedendorp. *Rayon Textile Monthly 28,* 281-3 (May, 1947).

In a brief, general survey it is emphasized that water is the largest raw material used in the production of textiles, it being noted that some 12,000,000 gal. may be used daily by some rayon yarn plants. TTD: 9-47

TEXTILE WASTE RECLAMATION (WOOL, RAYON AND REAL SILK). II. Anon. Brit. Intelligence Objectives Subcommittee Report No. 1294; price 1s ld.

Listed in Classified List No. 9 of Industrialists' Reports on German and Japanese Industry (June, 1947). TTD: 9-47

Hazards; operations; efficiency X 4

Fire hazards. Cotton storage practices contribute to fire losses. A. J. Brown, Associated Factory Mutual Fire Insurance Companies. *Textile World 97,* No. 4, 100-1 (Apr. 1947).

Fires in the baled-cotton storage departments of mills accounted for 20% of the total cotton fire loss from 1935 to 1945. Causes were traced to electrical equipment, spontaneous ignition, employee smoking, and outside sparks. Suggestions for fire prevention are given. TTD: 9-47

Knitting flow chart. Knitting flow chart. Anon. *Textile World 97,* No. 4, 89-96 (Apr. 1947).

A flow chart (second in a series) of the knitting processes for women's hosiery, men's full-fashioned hosiery, half-hose, anklets, etc., underwear and outwear is given. TTD: 9-47

Materials handling. Automatic cloth lowerer handles 120 rolls per day. Anon. *Textile World 97,* No. 3, 103 (Mar. 1947).

An illustrated description is given of a machine (at Eddystone Mfg. Co.) that lowers cloth rolls from second-floor storage to first-floor processing line. TTD: 9-47

Weaving. P. M. H. in weaving. T. Joy, J. Cawthra & Co., Ltd. *Textile Mercury & Argus 116,* 449-50 (Mar. 28, 1947).

Automatic looms will increase production per man hour. TTD: 9-47

BASIC SCIENCES XI

Cellulose determinations. Determination of alpha-cellulose. H. Tyden. *Ing. Vet. Akad. Handl.* No. 175, 1-83 (1943); *Chimie et Industrie 57,* No. 5, 482 (May, 1947).

A high content of alpha-cellulose considerably increases the value of the cellulose used in the manufacture of viscose. The determination of alpha-cellulose is a means of determining the mercerization yield. It is analyzed for its component parts by treating 0.3-0.5 g of cellulose with 15-25 cc of 17.5% alkali and then centrifuging. After acidification with H_2SO_4, beta-cellulose is precipitated and filtered off. The alpha-cellulose is determined oxidimetrically. The alkali treatment modifies the molecular structure of the wood fiber, which is composed of long molecules of micellar structure. The alkali frees the short chains which pass into solution. The quantity of short chains thus freed depends on the nature of the fiber and its previous treatment. TTD: 9-47

Titanium salts. Contribution to chemistry of titanium salts. Raymond Jonnard. *Chimie et Industrie 57,* No. 6, 551-7 (June, 1947).

The preparation of titanium salts and their biological and industrial applications are reviewed. The use of titanium sulfate in the textile industry are emphasized,

with reference to its dyeing, printing, mordanting, stripping and delustering properties. Eighty-six references. TTD: 9-47

INDUSTRIAL APPLICATIONS OF pH. Maurice Déribéré. Dunod, Paris; edition 3, 1945; 367 pp.; price 250 f.

Reviewed in *Chem. Weekblad. 43,* 558 (Sept. 6, 1947). TTD: 9-47

METHODS OF CELLULOSE CHEMISTRY. Chas. Dorée. Chapman & Hall, Ltd., London; edition 2; 1947; 543 pp.; price 42s.

Reviewed in *Chemistry & Industry 1947,* 550-1 (Sept. 6). TTD: 9-47

STATIC ELECTRICITY. Natl. Fire Protection Assn.; 60 Batterymarch St., Boston; 52 pp.; price 50¢.

Reviewed in *Textile World 97,* No. 4, 142 (Apr. 1947). TTD: 9-47

TEXTILE RESEARCH XII

Indian rayon industry. Report on Indian rayon industry. D. A. S. Chari. *Rayon Textile Monthly 28,* 365-6 (July, 1947).

India is considered as holding a future for the rayon industry, not only for imported rayon but for the raw materials to conduct research preceding the development of rayon manufacture in India. Four projected plants are mentioned.
ASJ TTD: 9-47

Italian textile industry. Italian textile industry in 1947. Antonio Giordano. *Rayon Textile Monthly 28,* 263-4 (May, 1947).

A brief survey, particularly with reference to the export situation. TTD: 9-47

Textile industry. Ten years of cotton textiles. Anon. *Rayon Textile Monthly 28,* 313 (June, 1947).

A 10-year resumé of machinery and production statistics (from Assn. of Cotton Textile Merchants of N. Y.) is tabulated and briefly discussed.
HAM TTD: 9-47

Textile laboratories. Efficient laboratory a "must" for modern finishers. Anon. *Textile World 97,* No. 3, 129 (Mar. 1947).

A description of a new laboratory in a finishing plant (Union Bleachery). TTD: 9-47

Textile research. Dan River completes research organization. C. Mallard Bowden, Textile World. *Textile World 97,* No. 4, 104-6 (Mar. 1947).

The new (Dan River Mill) laboratories are described with illustrations and the current research program discussed. Research is being coordinated with mill production, fabric design and the machine shop. TTD: 9-47

Textile research. Technology holds key to textile prosperity. Raymond Streat, Textile Inst. *Textile Mercury & Argus 116,* 451-2 (Mar. 28, 1947).

A lecture on the importance of research in the textile industry is summarized. TTD: 9-47

PROGRESS OF GERMAN TEXTILE INDUSTRY DURING WAR. Anon. Brit. Intelligence Objectives Subcommittee Misc. Report No. 6; price 25s 6d.

Listed in Classified List No. 8 of Reports on German and Japanese Industry (May 31, 1947). TTD: 9-47